Abstract Preview

Abstract

Title
Assessment of Potential Prebiotic Activity of Pineapple By-Products (Peels and Stems) Extracts and Maintenance of Bioavailability through *In Vitro* Gastrointestinal Tract System

Type
Poster Presentation

Theme
Probiotics and Prebiotics: Excellence in Science and Clinical Translation

Topic
Influence of Probiotics and Prebiotics on Diet, Nutrition and Drug Metabolism

Authors

Main Author
Debora Campos[1]

Presenting Author
Debora Campos[1]

Co-Author
Tânia Ribeiro[1]
José Teixeira[2]
Lorenzo Pastrana[3]
Maria Manuela Pintado[1]

Authors' Institution

Department / Institution / Country
Bioactive platform; CBQF - Centro de Biologia e Química Fina / Escola Superior de Biotecnologia - Universidade Católica Portuguesa / Portugal[1]
Centro de Engenharia Biológica / Universidade do Minho / Portugal[2]
Food Nanotecnology / INL - International Iberian Nanotechnology Laboratory / Portugal[3]

Content

Background and Rationale
Pineapple (Ananas comosus Merr.) is the third most important tropical fruit in the world production and one of the most processed fruit, but is the most important generating residues. These residues contain high content of bioactive compounds, but generally not directly available and for that reason is necessary to extract and characterize the feasible bioactive compounds.

Objectives: Indicates the purpose of the study
In previous work, was demonstrate the ability of pineapple extracts as prebiotic ingredients. Therefore, the focus of this research work was to perform an extended study on the prebiotic activity of pineapple by-products (peels and stems) extracts to explore the potential of the development of a new functional ingredient.

Methodology: Describe pertinent experimental procedures
Frozen pineapple vy-products (peels and stems) were submitted to a milling and pressing processes, creating a pineapple juice and solid semi-dried extract. The soluble fraction was submitted to an extraction of the pineapple enzymes (Bromelain) and the resulting soluble fraction was assessed.

Results: Summarize the results of the research
An initial screening was performed using six different probiotic strains from two different genera, *Lactobacillus sp.* and *Bifidobacterium sp*. All of the microorganisms showed a positive growth towards the pineapple extracts, with an exception of *Lactobacillus acidophilus*. The showed activity was in range of those promote by the positive control (frutooligosaccharide).

The extracts were studied to determine compounds profile by HPLC, establishing and understanding the relationship between structure and activity. Through HPLC analysis was showed two major peaks of oligosaccharides comprising MW of 2000 and 600 Da and identified as galactomannans and two monosaccharides, glucose and fructose, which explains the general high prebiotic activity. Finally, the extracts were submitted to gastrointestinal tract in order to evaluate the bioavailability of prebiotic activity after gastrointestinal conditions.

Conclusions: State the main conclusions
At this research work was possible to evaluate the pineapple by-products extracts as a prebiotic ingredient and its potential maintenance through gastrointestinal conditions.

Keywords: *Pineapple byproducts; bioactive compounds; oligossacharides; galactomannans; prebiotic ingredient*
Requires Audio or Video system for Presentation?: No

Back (/client/EventAttendeeAbstracts/iframe_published_abstract/381)